

Serial No. 09/726,192

Page 2

IN THE CLAIMS

Please reconsider the claims as follows:

1. ~~(currently amended) A method for selecting a determining at least one best performing content server in response to a request in a network including a plurality of content servers[[,]] and at least one redirection server, and a plurality of clients, the method comprising the steps of:~~

~~(a) creating a plurality of client clusters using the steps of: , wherein each of said plurality of client cluster clusters includes one or more~~

~~(a1) identifying clients having similar network distance properties;~~

~~(a2) grouping distance tuples using content server ID and classless inter-domain routing address (CIDR) prefix similarity to define grouping data values, a distance tuple comprising at least one of a network distance, a content server identifier, a time-stamp, and a client internet protocol (IP) address;~~

~~(a3) storing the data values at leaf nodes of a hierarchical tree structure having a root node representing CIDR space and a plurality of interior and leaf nodes, said data values including load information, network distances, and a number of the tuples; and~~

~~(a4) defining the client clusters by combining leaf nodes having sufficient similarity into parent nodes and identifying remaining leaf nodes as the client clusters;~~

~~(b) identifying [[said]] at least one best-performing content server for each of said plurality of client clusters by determining network distances between each of said plurality of client clusters and each of said plurality of content servers and selecting at least one content server for each of said plurality of client clusters having a minimal minimum network distance there between to the client cluster; and~~

~~(c) mapping each of said plurality of the client clusters to a corresponding said at least one identified with the at least one best-performing content server.~~

2. ~~(currently amended) The method of claim 1, wherein the at least one redirection server is an authoritative domain name (DN) server coupled to a which receives said requests from a plurality of local DNS servers.~~

Serial No. 09/726,192
Page 3

3. (cancelled)

4. (currently amended) The method of claim 1, wherein the step (c) further comprises:

~~including the step of assigning [[a]] selection probability to the each of said at least one identified best-performing content server, wherein said selection probability ensures to ensure that [[a]] maximum service capacity of each of said at least one identified the best-performing content server is not [[never]] exceeded.~~

5. (cancelled)

6. (currently amended) The method of claim 1 [[5]], wherein the step (a3) further comprises: of obtaining distance information includes the steps of:

~~collecting at said plurality of content servers a plurality of load tuples, wherein each load tuple comprises at least one of or more of the following: a time-stamp, a content-server ID, a client IP address, a number of hits, and a domain index.~~

7. (currently amended) The method of claim 6 [[5]], further comprising: the step of

~~pulling the said plurality of distance and load tuples from each of said plurality of content servers at successive data acquisition intervals; and~~

~~storing the plurality of distance and load tuples at said at least one redirection server.~~

8. (currently amended) The method of claim 7 [[6]], further comprising the step of multiplying certain data values corresponding to the of said plurality of distance and load tuples by a weighting factor in each of said successive data acquisition intervals.

9. (currently amended) The method of claim 1 [[6]], wherein [[said]] a

Serial No. 09/726,192

Page 4

network distance is computed as one of a round trip time, jitter, bandwidth and packet loss.

10. (currently amended) The method of claim 9, wherein said round trip time is computed by monitoring [[all]] data packets transmitted and received by the one of said plurality of content servers.

11-13. (cancelled)

14. (currently amended) The method of claim 1, wherein the step (c) of mapping each of said plurality of client clusters with the corresponding said at least one identified best performing content server further comprises: the step of assigning an assignment probability to the each of said at least one identified best-performing content server.

15. (currently amended) The method of claim 14 [[13]], wherein said assignment probabilities for each of said at least one identified best performing content server is are obtained from a flow map characterizing data flow in the network.

16. (currently amended) A system for selecting a determining at least one best performing content server in response to a client request in a network including a plurality of content servers[[,]] and at least one redirection server, and a plurality of clients, the system comprising:

a first means [[for]] creating a plurality of client clusters using the steps of;
, wherein each of said plurality of client clusters includes one or more clients having IP addresses having similar network distance properties;

(a1) identifying clients having similar network distance properties;
(a2) grouping distance tuples using content server ID and classless inter-domain routing address (CIDR) prefix similarity to define grouping data values, a distance tuple comprising at least one of a network distance, a content server identifier, a time-stamp, and a client internet protocol (IP) address;

Serial No. 09/726,192
Page 5

(a3) storing the data values at leaf nodes of a hierarchical tree structure having a root node representing CIDR space and a plurality of interior and leaf nodes, said data values including load information, network distances, and a number of the tuples; and

(a4) defining the client clusters by combining leaf nodes having sufficient similarity into parent nodes and identifying remaining leaf nodes as the client clusters;

a second means [[for]] identifying [[said]] at least one best-performing content server for each of said plurality of client clusters by determining network distances between each of said plurality of client clusters and each of said plurality of content servers and selecting at least one content server for each of said plurality of client clusters having a minimum network distance there between to the client cluster; and

a third means [[for]] mapping each of said plurality of the client clusters with the a corresponding said at least one identified best-performing content server.

17. (currently amended) The system of claim 16, further including a forth means for assigning [[a]] selection probability to the each of said at least one identified best-performing content server, wherein said selection probability ensures to ensure that [[a]] maximum service capacity of each of said at least one identified the best-performing content server is not [[never]] exceeded.

18. (cancelled)

19. (currently amended) The system of claim 18, wherein [[said]] the first means for obtaining distance and load information further includes:

a forth means [[for]] collecting at said plurality of content servers a plurality of load tuples, wherein each load tuple comprises at least one of or more of the following: a time-stamp, a content-server ID, a client IP address, a number of hits, and a domain index.

20. (currently amended) The system of claim 16, wherein said identifying the first means further includes:

Serial No. 09/726,192
Page 6

a fifth means [[for]] modifying said determined the network distance based upon according to the a number of distance tuples received.

21. (currently amended) The system of claim 16, wherein said identifying the first means further includes:

a sixth means [[for]] maintaining [[said]] identification of said at least one identified best-performing content server for an amount of time determined by [[a]] calculating a confidence level calculation.